

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Operator: True Oil LLC
Well Name/Number: Hagen 24-34-3-10H
Location: SE SW Section 34 T26N R58E
County: Richland, **MT;** **Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 35 to 40 days drilling time.

Unusually deep drilling (high horsepower rig): No, triple derrick drilling rig to drill to 20,764'MD/10,305'TVD, single lateral Bakken Formation horizontal well test.

Possible H2S gas production: Possible H2S from the Mississippian Formations.

In/near Class I air quality area: No Class I air quality area in the area of review.

Air quality permit for flaring/venting (if productive Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

- ☐ Air quality permit (AQB review)
- ☐ Gas plants/pipelines available for sour gas
- ☐ Special equipment/procedures requirements
- ☐ Other: _____

Comments: No special concerns – using a triple derrick drilling rig to drill to 20,764'MD/10,305'TVD, single lateral Bakken Formation horizontal well test. If there are existing pipelines for natural gas in the area, associated gas can be gathered or if no gathering system nearby, associated gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, oil based invert mud system will be used for drilling the mainhole and saltwater for drilling the horizontal lateral. Freshwater and freshwater mud system will be used for drilling the surface hole.

High water table: Possible high water table in the area of review.

Surface drainage leads to live water: No, closest drainage is Four Mile Creek, about ¼ of a mile to the south southeast.

Water well contamination: No, closest water wells are about 3/16 of a mile to the southwest, about ½ of a mile to the east, about ½ of a mile to the southwest, about 7/8 of a mile to the southwest, about 7/8 of a mile to the northwest and about 1 mile to the north, about from this location. Depth of these water wells range from 25' to 290'.

Surface hole will be drilled with freshwater and surface casing set to 2000' and cemented to surface.

Porous/permeable soils: No, sandy silty clay soils.

Class I stream drainage: No Class I stream drainages in the area of review.

Mitigation:

- ☒ Lined reserve pit
- ☒ Adequate surface casing
- ☐ Berms/dykes, re-routed drainage
- ☒ Closed mud system
- ☒ Off-site disposal of solids/liquids (in approved facility)

☒ Other: Lined cuttings pit will be constructed.

Comments: 2000' of surface casing cemented to surface adequate to protect freshwater zones. Also, fresh water mud systems to be used. Drilling fluids will be disposed of offsite in an authorized Class II SWD. Cuttings will be buried in a lined cuttings pit on the wellsite.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No stream crossing anticipated, will be crossing only ephemeral drainages.

High erosion potential: No, small cut, up to 1.8' and small fill, up to 1.3', required.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: Yes, a large wellsite, 430'X370' location size required.

Damage to improvements: Slight, surface use is a cultivated field.

Conflict with existing land use/values: Slight, surface use is a cultivated field.

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other _____

Comments: Will used existing gravel county road, #142. A short new access road will be built from the county gravel road into this location, about 187' of new access into this location. Invert based oil mud will be recycled. Completion fluids will be hauled to a Class II SWD. Cuttings will be buried in the lined cuttings pit and allowed to dry before burial. No special concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Nearest residences are about 3/16 of a mile to the southwest, about 3/4 of a mile to the northeast and about 7/8 of a mile to the north northwest from this location.

Possibility of H2S: Yes, possible from the Mississippian Formations.

Size of rig/length of drilling time: Small drilling rig 35 to 40 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing cemented to surface 2000' and operational BOP (5,000 psig stack, annular and pipe blind rams) should mitigate any problems. (BOP's 5,000 psig annular, pipe and blind rams) rule 36.22.1014.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: None identified.

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Least Tern, Whooping Crane and Piping Plover.

Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH tracker website for this Township and Range lists four (4) species of concern: Great Blue Heron, Piping Plover, Whooping Crane and Least Tern. NH Tracker website lists one (1) Potential Species of Concern: the Hayden's Shrew.

Mitigation:

___ Avoidance (topographic tolerance/exception)

___ Other agency review (DFWP, federal agencies, DSL)

___ Screening/fencing of pits, drillsite

___ Other: _____

Comments: Private surface cultivated land. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites None identified

Mitigation

___ avoidance (topographic tolerance, location exception)

___ other agency review (SHPO, DSL, federal agencies)

___ Other: _____

Comments: Private surface cultivated land.. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

___ Substantial effect on tax base

___ Create demand for new governmental services

___ Population increase or relocation

Comments: No concerns. Wildcat well single lateral Bakken Formation well test 20,764'MD/10,305'TVD.

Remarks or Special Concerns for this site

Well is a 20,764'MD/10,305'TVD, single lateral Bakken Formation horizontal well test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur, but will be mitigated in time.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): \s\Steven Sasaki
(title:) Chief Field Inspector
Date: August 10, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC
website.
(Name and Agency)
Richland County water wells.
(subject discussed)
August 10, 2012
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Richland County
(subject discussed)

August 10, 2012
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T26N R58E
(subject discussed)

August 10, 2012
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: _____
Others present during inspection: _____